

Conifers at risk of shrinkage

The oak withstood the heatwave in 2018 better than the Norway spruce and Scots pine. Beech trees were somewhere in between. These findings are from a European study led by the Forest Ecology & Forest Management chair group. The researchers based their conclusions on measurements of 377 trees of 21 different species. They used dendrometers to accurately determine the width of the tree trunks. The results were published in January in *Nature Communications*.

The width of a trunk varies over the course of the day: during daylight hours it shrinks as water is transported to the

leaves, and at night it expands as water is taken from the soil and fills the trunk and bark. This is also when the tree grows. When the water reserves in the soil are depleted during long, hot, dry periods, the trunks are no longer able to refill with water and the trees become stressed. That can have an effect on growth for years to come. The study showed that conifer species were more prone to shrinkage than deciduous trees. Ute Sass-Klaassen of Forest Ecology & Forest Management says tree monitoring with dendrometers can be used as an early warning system for detecting drought stress in trees.
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